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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/563,590	03/01/2007	Enrique Pablos	U 016100-0	3669
140 7590 LADAS & PARRY 26 WEST 61ST STREET NEW YORK, NY 10023			EXAMINER LAO, MARIALOUISA	
			ART UNIT 1621	PAPER NUMBER
			MAIL DATE 01/04/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

Application No.

10/563,590

Applicant(s)

PABLOS, ENRIQUE

Examiner

M. Louisa Lao

Art Unit

1621

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 17 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-16, 25, 27-37 and 42-51 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16, 25, 27-37 and 42-51 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 07/27/2007.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In step (iii) line 2, claim 1 recites "carboxylate-aminoate". It is unclear what attributes or structures or general formula a compound must have to qualify as a carboxylate-aminoate. One of ordinary skill in the art at the time of Applicant's invention, would not ascertain the metes and bounds of the term without proper guidance.

3. Claims 34 and 36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In lines 2-3, claim 34 recites "the removal of water is accomplished by adding an adsorbent and heating in the range of 90-98°C"; while claim 36 in lines 2-4 recites "the removal of water is accomplished by submitting...to vacuum conditions...at a speed of 1500-3000rpm", both of which do not limit or correspond to step (ii) of claim 1, which recites "keeping said *exothermic reaction* stirred for a sufficient time for removal of water". It is unclear if claims 34 and 36 are additional steps or part of step (ii) of claim 1.

### *Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

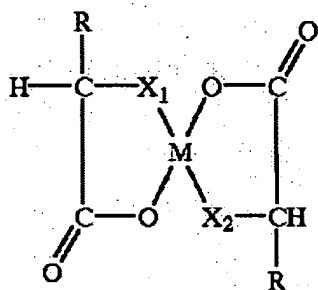
1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 1-16, 25, 27-37 and 42-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsu (US6197815, US'815 *in IDS*) and Hsu (US5504055, US'055) in view of Ericson et al. (US6716814, US'814).

7. The instant claims are drawn to a process for preparing metal carboxylates, with the formula  $M(RCOO)_2$  (with substituents as recited therein) in the form of dry powder; comprising the stages, *inter alia*: (i) exothermic reaction of a carboxylic acid with dry divalent metallic base, forming carboxylate and with water as by-product; (ii) keeping reaction mixture (i) stirred for time sufficient for water removal; (iii) pouring an aminoate onto (ii) to yield a carboxylate-aminoate.

8. US'815 teaches a process for providing an animal feed additive by preparing metal amino acid chelates to facilitate and promote the growth of animals (column 1 lines 8-10). US'815 teaches metal salt complex produced by blending a metal salt, an amino acid and an organic hydroxy acid in deaerated water, said complex having the formula as shown therein (column 3 lines 28-47). US'815 teaches that the metal ions include water soluble salts of *inter alia* copper

and zinc and the metal salts include *inter alia* water soluble carbonates, oxides and hydroxides (column 4 lines 29- 34), the organic acids include acids with one or more carboxyl or one or more hydroxyl groups, and the amino acids include glycine and methionine (column 4 lines 36- 51). US'815 teaches that the structure of the metal amino acid chelate, a snapshot is as shown in next page, where the organic acid may substitute for some of the amino acid groups (column 5 lines 8-32). US'815 teaches that one of the chelating agent is amino acid and other is organic acid (column 5 lines 28-29), *which increases stability of the chelates* (column 5 lines 33-34).



Where  $X_1 = \text{NH}_2$  and  $X_2 = \text{NH}_2$  or O. M is a metal ion and R a carbon containing compound derived from the amino acid or organic acid with or without the addition of —S, —NH<sub>2</sub>, —COOH or other groups commonly making up amino acids or organic acids. There are two molecules of the chelating agent to 1 molecule of metal. A ring structure is formed between each of the chelating agents and the metal.

US'815 teaches in working

examples the metal amino acid chelate in columns 5-8; where in Example III, calcium/malonic/lysine chelate was prepared, the mixture stirred until no more material would dissolve, the mixture filtered to remove undissolved materials, filtrate dried and subsequently the dry material is ground.

While, US'055 teaches metal amino acid chelate for improved plant growth, prepared by adding a metal salt to deaerated water, mixing the salt solution with a mixture of an amino acid and an organic acid (see abstract). US'055 teaches that alternatively, the chelate solution can be dried by standard processing techniques, where the dried material is converted to fine granules or powder (column 2 lines 41-42). The metals and metal salts of *inter alia* indicated are copper and zinc and oxides and hydroxides, thereof (column 2 lines 47-54). The organic acids include acids with one or more carboxyl groups and/or one or more hydroxyl groups (column 2 lines 54-55); while amino acids, include *inter alia*, glycine and methionine (column 3 line 1). US'055 teaches the structure discussed *supra* by US'815. The working examples in columns 3-7 indicate the composition as set forth by the structure, where in Example VI, calcium/malonic/lysine chelate was prepared, the mixture stirred until no more material would dissolve, the mixture filtered to remove undissolved materials, filtrate dried and subsequently the dry material is ground.

9. The instant claims differ from the US'815 and US'055 in the recitation of the (a) stages of preparation of an "carboxylate-aminoate", (b) the use of a solvent (or water), (c) the specific acids, (d) the use of a vacuum, (d) specific molar or weight ratios, (e) speed or length of stirring; (f) recovery of unreacted material; (g) addition of or maintenance of additional heat; and, (h) the term carboxylate-aminoate.

10. The differences are not patentable, however, since at the time of Applicant's invention, one of ordinary skill in the art looking for a method to incorporate metals into amino acids with organic acids, would have found it obvious to start with the teachings of the cited prior art references and use alternate organic acids, like formic acid or butyric acid, or optimize the

reaction conditions with the use of stirrers, vacuum absorbers and the recovery of unused material for re-use.

11. An artisan of ordinary skill would have been motivated to start with the teachings of the cited prior art references and use alternate materials, or optimization techniques, since US'814 has taught that a metal ion of valency of +2 can be bonded by four bonds when fully chelated, where it is possible for the metal ion to be bonded to two carboxyl oxygen of a carboxylic acid and to the amino group and carboxyl of an amino acid (column 2 lines 33-47), where the molar ratios of ligand to metal can be 1:1 to 4:1 (column 1 lines 65-66). US'814 teaches the chelation of metal with suitable ligands enhances solubility. The artisan then would reach a reasonable expectation of producing metal chelates, intended to facilitate growth and absorption in both plants and non-human animals.

12. The claim would have been obvious because the substitution of one known element for another would have yielded predictable results to one of ordinary skill in the art at the time of the invention, as in the instant materials of formic acid and butyric acid.

13. Absent the showing of unexpected results, the instant carboxylate-aminoate from the materials and reaction parameters are considered equivalent to the amino acid metal chelates taught in the cited prior references. The equivalent materials and reaction parameters, thereto are considered optimization techniques absent the showing of criticality.

Optimizing such processes is *prima facie* obvious because an ordinary artisan would be motivated to use known processes from the art to make the process more efficient or explore economical advantages over the other. Merely modifying the process conditions is not a patentable modification absent a showing of criticality. In re Aller, 220 F.2d 454, 105 U.S.P.Q. 233 (C.C.P.A. 1955).

In applying known technique to a known device (method, or product) ready for improvement to yield predictable results, the claim would have been obvious because a particular known technique was recognized as part of the ordinary capabilities of one skilled in the art.

Application/Control Number:  
10/563,590  
Art Unit: 1621

Page 7

### *Correspondence*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MLouisa Lao whose telephone number is 571-272-9930. The examiner can normally be reached on Mondays to Thursdays from 8:00am to 8:00pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yvonne Eyler can be reached on 571-272-0871. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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